

Academic Vocabulary

CONTENT BUILDER FOR THE PLC

SCIENCE
GRADE 8

PLEASE NOTE: The words contained in **Academic Vocabulary** are words/concepts/terms essential for concept development; this list is not intended to be comprehensive. The “new to grade level” vocabulary suggestions are a starting point, and educators are encouraged to refer to their district curriculum resources for additional words/concepts/terms.

Properties of Matter

8.6 Matter and energy. The student understands that matter can be classified according to its properties and matter is conserved in chemical changes that occur within closed systems.

important words for concept development				
subcluster	standards	new to grade level		previously introduced
Classification of Matter	8.6(A)	chemical bond		compound* element* heterogeneous mixture homogeneous mixture
	6.6(C)			brittle conductivity* density* ductility dull element* fluorescence luster
Physical and Chemical Properties	8.6(C), 8.6(D)	acid/acidic/acidity adhesion alkaline/alkalinity base bitter capillary action cohesion	indicator neutral pH scale sour water droplet xylem	corrosion surface tension
	6.6(D)			density* mass* meniscus relative density
				mixture pure substance solution* magnetism malleability* metal metalloid nonmetal* periodic table* physical property* rare earth element
				volume* water displacement method

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Properties of Matter (continued)

8.6 Matter and energy. The student understands that matter can be classified according to its properties and matter is conserved in chemical changes that occur within closed systems.

important words for concept development				
subcluster	standards	new to grade level		previously introduced
Atomic Reactivity	8.6(B)	chemical equation		atom* atomic number chemical formula* chemical property chemical reaction* chemical symbol
		element* periodic table* precipitate product reactant*		
Chemical Formulas, Reactions, and Equations	8.6(E) 7.6(B), 7.6(C), 6.6(E)	chemical equation coefficient law of conservation of mass		chemical reaction* compound* mass* photosynthesis
		atom* atomic mass atomic number chemical change chemical formula* chemical property chemical reaction* chemical symbol* compound* condensation corrosion element* evaporation flammability freezing matter		product reactant* subscript yield melting molecule* oxidation Periodic Table of the Elements* physical change* physical property* precipitate product reactant state of matter sublimation subscript thermal energy* yield

Force and Motion

8.7 Force, motion, and energy. The student understands the relationship between force and motion within systems.

important words for concept development					
subcluster	standards	new to grade level		previously introduced	
Force	8.7(A), 8.7(B)	action force*	law of inertia	acceleration*	mass*
		frictionless*	Newton's second law of motion	applied force*	motion
		gravitational constant		balanced force*	N*/Newton*
		law of action-reaction	reaction force*	force*	net force*
		law of force and acceleration		friction*	speed*
				gravity*	unbalanced force*
				inertia*	
				applied forces*	magnetism
				balanced force*	magnitude
				contact force	motion
				force	N/Newton*
				free-body diagram	net force*
				friction*	normal forces
				gravity	unbalanced force*
				horizontal	vertical
Linear Motion	7.7(A), 7.7(B), 7.7(C)			acceleration*	linear motion
				average speed*	motion*
				constant speed*	slope
				constant velocity*	speed*
				direction	time*
				displacement	velocity*
				distance	x-axis
				instantaneous speed	y-axis

Energy

8.8 Force, motion, and energy. The student knows how energy is transferred through waves.

important words for concept development				
subcluster	standards	new to grade level		previously introduced
Characteristics of Waves	8.8(A)	amplitude crest electromagnetic spectrum* electromagnetic wave frequency*	hertz transverse wave trough wave wavelength*	energy medium oscillation
	8.8(B)	electromagnetic spectrum* electromagnetic wave fiber optic gamma microwave* radiation therapy	radio wave receiver transmitter ultraviolet sterilization visible light wireless technology X-ray*	
Energy	7.8(A), 7.8(C), 6.8(B), 6.8(C)			conduction convection electrical circuit energy energy transfer energy transformation food web heat kinetic energy* law of conservation of energy longitudinal wave medium motion* oscillation particle photosynthesis radiation temperature thermal energy transverse wave wave

The Universe

8.9 Earth and space. The student knows the effects resulting from cyclical movements of the Sun, Earth, and Moon.

important words for concept development				
subcluster	standards	new to grade level		previously introduced
Stars	8.9(A)	absolute magnitude apparent magnitude black hole brightness* Hertzsprung-Russell diagram* Kelvin (K) luminosity* main-sequence star*	nebulae* nuclear fusion protostar spectral class* supergiant* supernova surface temperature* white dwarf*	
Galaxies	8.9(B)	elliptical galaxy* galaxy * irregular galaxy*	Milky Way galaxy* spiral galaxy	solar system
Theories of the Origins of the Universe	8.9(C)	big bang theory cosmology Hubble's law intelligent design theory redshift universe		evidence gravity* theory

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The Universe (continued)

8.9 Earth and space. The student knows the effects resulting from cyclical movements of the Sun, Earth, and Moon.

important words for concept development			
subcluster	standards	new to grade level	previously introduced
Seasons, Tides, and Gravity	7.9(B), 6.9(A), 6.9(B)		cyclical daily tides elliptical orbit* equinox force* gravitational attraction* gravitational force gravity* high tide low tide lunar cycle neap tide northern hemisphere* ocean tide* orbit* revolve/revolution* seasons* solar system solstice southern hemisphere* spring tide tidal bulge tidal range
Earth's Dynamic Layers	7.10(A), 7.10(B), 6.10(B)		continental crust* continental drift theory convection current convergent boundary* crust divergent boundary* earthquake* evidence fault* fossil record geological event hot spot inner core lithosphere magma mantle mid-ocean ridge* mountain building ocean basin oceanic crust* outer core Pangaea plate tectonics plate tectonics theory seafloor spreading subduction* super volcano superposition transform boundary* volcano

Weather

8.10 Earth and space. The student knows characteristics of the universe.

important words for concept development					
subcluster	standards	new to grade level		previously introduced	
Solar Energy, Hydrosphere, and Atmosphere Interactions	8.10(A), 8.10(B), 8.10(C)	air mass	storm surge	atmosphere	hydrosphere
		atmospheric pressure	storm system*	conduction	ocean currents
		cold front	surface temperature*	convection	precipitation
		convection cells	tropical cyclone	evaporation	radiation
		convergence	tropical depression	global pattern	weather
		Coriolis effect	typhoon	hurricane*	
		Doppler radar	weather front (cold, warm)		
		jet stream	weather map		
		map			
		pressure system (high, low)			

Climatic Influences

8.11 Earth and space. The student knows that natural events and human activity can impact global climate.

important words for concept development					
subcluster	standards	new to grade level		previously introduced	
Climatic Influences	8.10(A), 8.11(A), 8.11(B)	absorption carbon footprint carbon sequestration climate model climate variability deforestation	emission greenhouse effect greenhouse gases meteor impact radiant energy urbanization	atmosphere climate convection fossil fuel human activity	hydrosphere natural event ocean currents volcanic eruption
The Carbon Cycle	8.11(C)	biogeochemical cycle carbon cycle carbon footprint combustion greenhouse effect respiration		decomposition fossil fuel photosynthesis	

Organisms and Environments

8.12 Organisms and environments. The student understands stability and change in populations and ecosystems.

important words for concept development					
subcluster	standards	new to grade level		previously introduced	
Flow of Energy	8.12(A)	human intervention natural disaster		biodiversity* ecosystem food web* population transfer of energy	
	7.12(A)			10% rule autotroph biomass consumer decomposer energy flow energy pyramid*	food chain heterotroph primary consumer producer secondary consumer tertiary consumer trophic level
Ecosystem Stability	8.12(B), 8.12(C)	biological succession climax community ecological succession* genetic variation* pioneer species	population diversity* primary succession* secondary succession* species diversity	adaptation* biodiversity* ecosystem* habitat interdependence natural event	niche population* species* stability sustainability*
	6.12(A)			abiotic factor biodiversity biotic factor compete competition* ecosystem* environment food	Interdependence light* organism population soil composition temperature range* water

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Organisms and Environments (continued)

8.12 Organisms and environments. The student understands stability and change in populations and ecosystems.

important words for concept development			
subcluster	standards	new to grade level	
Earth's Water and Human Activity	7.11(A), 7.11(B)	previously introduced	
		agricultural runoff	ocean system
		aquifer	percolate*
		artificial reef	permeability
		coral bleaching	phytoplankton*
		dependence	pollution
		eutrophication	porosity
		fertilizer*	runoff
		groundwater*	surface water
		habitat destruction	water table*
		hydrosphere	watershed*
		infiltration	

Structure, Function, and Survival

8.13 Organisms and environments. The student knows how cell functions support the health of an organism and how adaptation and variation relate to survival.

important words for concept development				
subcluster	standards	new to grade level		previously introduced
Cell Functions and Body Systems	8.13(A)	cell membrane*	nucleus*	cell
		cell wall	organelle	function
		chloroplast*	ribosome	
		cytoplasm	vacuole*	
		mitochondrion*		
Cell Functions and Body Systems	7.13(A), 6.13(A)			cell
				cell theory*
				circulatory*
				digestive*
				endocrine*
				function
				immune
				integumentary
Inherited Traits	8.13(B)	chromosome*	heredity	adaptation
		dominant	phenotype	inherited
		gene*	protein	offspring
		genetic trait	Punnett square	trait
		genome	recessive	
		genotype	reproduction	

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Structure, Function, and Survival (continued)

8.13 Organisms and environments. The student knows how cell functions support the health of an organism and how adaptation and variation relate to survival.

important words for concept development				
subcluster	standards	new to grade level		previously introduced
Variation and Survival	8.13(C)	behavioral adaptation physiological adaptation structural adaptation	generation natural selection population	species* trait variation
	7.13(C), 7.13(D)		adaptation* artificial selection asexual reproduction* diverse offspring domestic animal dominant species* frequency* gene pool generation genetic diversity genetic variation* genetically identical*	habitat* hybrid plant inherited mutation natural selection offspring* population selective breeding* sexual reproduction* species* trait uniform offspring